UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 7,071,205 B2
APPLICATION NO. : 10/684229
DATED : July 4, 2006
INVENTOR(S) : Lin Zhi et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

IN THE TITLE PAGES:

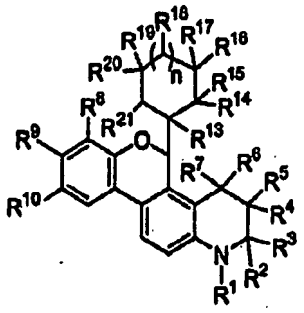
In Item [56] References Cited, in U.S. PATENT DOCUMENTS:
please add the following reference: --6,001,846 A 12/1999 Edwards et al. 514/285--
in 6,566,358 please replace "Zhi et al." with --Zhang et al.--
in 6,566,372 please replace "West et al." with --Zhi et al.--

In Item [56] References Cited, in OTHER PUBLICATIONS:
in Hamann et al., please replace "dihyrdo" with --dihydro--

At column 8, Table A, row R^1, please replace "C_1-C haloalkyl" with --C_1-C_4 haloalkyl--
at column 9, Table A, row R^9, please replace "$CONR^HR^{12}$" with --$CONR^{11}R^{12}$--
at column 11, Table A, below row R^{16}, please replace "R^{15}" with --R^{16}--

Please replace Claims 12, 13, 14, and 15 with the following Claims:

Col. 40
12. A compound of the formula:



(I)

wherein:
R^1 is selected from the group of hydrogen, C_1–C_4 alkyl, C_1–C_4 haloalkyl, C_1–C_4 heteroalkyl, COR^{11}, CO_2R^{11}, SO_2R^{11}, and $CONR^{11}R^{12}$;
R^2 and R^3 each independently is selected from the group of hydrogen, C_1–C_6 alkyl, and C_1–C_6 haloalkyl; or
R^2 and R^3 taken together form a cycloalkyl ring of from three to twelve carbons;
R^4 through R^7 each independently is selected from the group of hydrogen, F, Cl, Br, CN, OR^{11}, C_1–C_4 alkyl, C_1–C_4 haloalkyl, and C_1–C_4 heteroalkyl; or
R^5 and R^7 taken together form a bond; or
R^6 and R^7 taken together are selected from the group of methylidene, mono-substituted methylidene, di-substituted methylidene and carbonyl;

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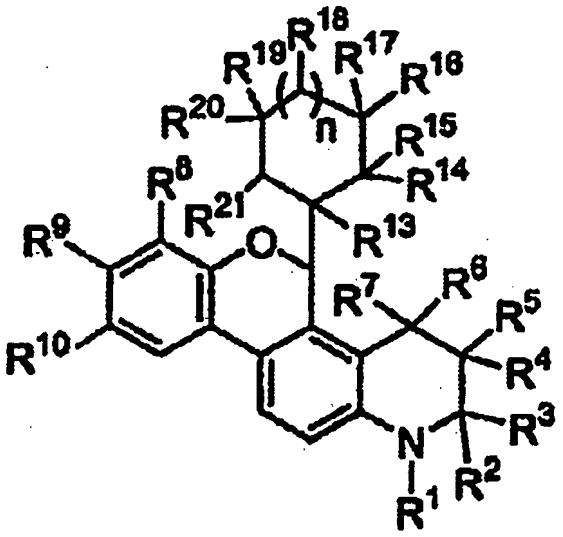
R^8 through R^{10} each independently is selected from the group of hydrogen, F, Cl, Br, I, NO_2, CN, OR^{11}, $NR^{11}R^{12}$, SR^{11}, COR^{11}, CO_2R^{11}, $CONR^{11}R^{12}$, C_1–C_8 alkyl, C_1–C_8 heteroalkyl, C_1–C_8 haloalkyl, allyl, C_2–C_8 alkenyl and C_2–C_8 alkynyl;
R^{11} and R^{12} each is independently selected from the group of hydrogen, C_1–C_4 alkyl, C_1–C_4 heteroalkyl, and C_1–C_4 haloalkyl;
R^{13} is hydrogen;
R^{14} and R^{16} taken together form a bond or "–O–" bridge;
R^{15}, R^{17}, R^{18}, R^{19}, R^{20} each independently is selected from the group of hydrogen, F, Cl, C_1–C_4 alkyl, and C_1–C_4 haloalkyl;
R^{21} is hydrogen; and
n is 0, 1, 2, or 3;
or a pharmaceutically acceptable salt thereof.

Col. 41
13. A compound of the formula:



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wherein:
R^1 is selected from the group of hydrogen, C_1–C_4 alkyl, C_1–C_4 haloalkyl, C_1–C_4 heteroalkyl, COR^{11}, CO_2R^{11}, SO_2R^{11}, and $CONR^{11}R^{12}$;
R^2 and R^3 each independently is selected from the group of hydrogen, C_1–C_6 alkyl, and C_1–C_6 haloalkyl; or
R^2 and R^3 taken together form a cycloalkyl ring of from three to twelve carbons;
R^4 through R^7 each independently is selected from the group of hydrogen, F, Cl, Br, CN, OR^{11}, C_1–C_4 alkyl, C_1–C_4 haloalkyl, and C_1–C_4 heteroalkyl; or
R^5 and R^7 taken together form a bond; or
R^6 and R^7 taken together are selected from the group of methylidene, mono-substituted methylidene, di-substituted methylidene and carbonyl;
R^8 through R^{10} each independently is selected from the group of hydrogen, F, Cl, Br, I, NO_2, CN, OR^{11}, $NR^{11}R^{12}$, SR^{11}, COR^{11}, CO_2R^{11}, $CONR^{11}R^{12}$, C_1–C_8 alkyl, C_1–C_8 heteroalkyl, C_1–C_8 haloalkyl, allyl, C_2–C_8 alkenyl and C_2–C_8 alkynyl;
R^{11} and R^{12} each is independently selected from the group of hydrogen, C_1–C_4 alkyl, C_1– C_4 heteroalkyl, and C_1–C_4 haloalkyl;
R^{13} is hydrogen;
R^{14}, R^{15}, R^{18}, R^{19}, R^{20} each independently is selected from the group of hydrogen, F, Cl, C_1–C_4 alkyl, and C_1–C_4 haloalkyl;
R^{16} and R^{17} taken together are selected from the group of methylidene, mono-substituted methylidene, and di-substituted methylidene;
R^{21} is hydrogen; or
R^{21} and R^{20} taken together form a bond;
n is 0, 1, 2, or 3;
or a pharmaceutically acceptable salt thereof.

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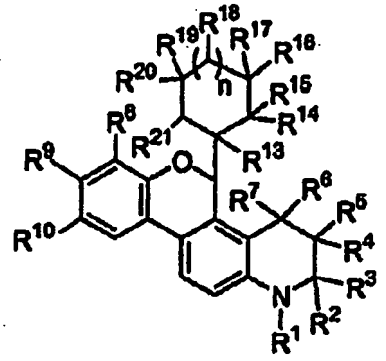
Col. 42

14. A compound of the formula:



(I)

wherein:

R^1 is selected from the group of hydrogen, C_1–C_4 alkyl, C_1–C_4 haloalkyl, C_1–C_4 heteroalkyl, COR^{11}, CO_2R^{11}, SO_2R^{11}, and $CONR^{11}R^{12}$;

R^2 and R^3 each independently is selected from the group of hydrogen, C_1–C_6 alkyl, and C_1–C_6 haloalkyl; or

R^2 and R^3 taken together form a cycloalkyl ring of from three to twelve carbons;

R^4 through R^7 each independently is selected from the group of hydrogen, F, Cl, Br, CN, OR^{11}, C_1–C_4 alkyl, C_1–C_4 haloalkyl, and C_1–C_4 heteroalkyl; or

R^5 and R^7 taken together form a bond; or

R^6 and R^7 taken together are selected from the group of methylidene, mono-substituted methylidene, di-substituted methylidene and carbonyl;

R^8 through R^{10} each independently is selected from the group of hydrogen, F, Cl, Br, I, NO_2, CN, OR^{11}, $NR^{11}R^{12}$, SR^{11}, COR^{11}, CO_2R^{11}, $CONR^{11}R^{12}$, C_1–C_8 alkyl, C_1–C_8 heteroalkyl, C_1–C_8 haloalkyl, allyl, C_2–C_8 alkenyl and C_2–C_8 alkynyl;

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

R^{11} and R^{12} each is independently selected from the group of hydrogen, C_1–C_4 alkyl, C_1–C_4 heteroalkyl, and C_1–C_4 haloalkyl;
R^{13} is hydrogen;
R^{14}, R^{15}, R^{17}, R^{20} each independently is selected from the group of hydrogen, F, Cl, C_1–C_4 alkyl, and C_1–C_4 haloalkyl;
R^{16} and R^{18} taken together form a bond when n is 1;
R^{16} and R^{19} taken together form a bond when n is 0;
R^{21} is hydrogen; and
n is 0, 1, 2, or 3;
or a pharmaceutically acceptable salt thereof.

Col. 42-45
15. A Compound selected from the group of:

(±)-(51,1'l)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 24);
(±)-(51,1'u)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 25);
(+)-(51,1'l)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 27);
(–)-(51,1'l)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 28);
(±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-hydroxy-1 ,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 29);

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(±)-(51,1'u)-5-(3-methyl-2-cyclohexenyl)-9-hydroxy-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 30);
(+)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-hydroxy-1,2-dihydro-2,2,4-trimethyl-5H-cbromeno[3,4-fjquinoline (compound 32);
(–)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-hydroxy-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-fJquinoline (compound 33);
(±)-(51,1'1)-5-3-methyl-2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 34);
(±)-(51,1'u)-5-(3-methyl-2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 35);
(+)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 37);
(–)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 38);
(±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-methoxy-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 39);
(±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2-dimethyl-5H-chromeno[3,4-f]quinoline (compound 41);
(±)-(51,1'u)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2-dimethyl-5H-chromeno[3,4-f]quinoline (compound 42);
(±)-(51,1'1)-5-(3-methyl-2-cyclopentenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 44);
(±)-(51,1'u)-5-(3-methyl-2-cyclopentenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethy-5H-chromeno[3,4-f]quinoline (compound 45);

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(±)-(51,1'1)-5-(3,5,5-trimethyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 47);
(±)-(51,1'u)-5-(3,5,5-trimethyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 48);
(±)-(51,1'1)-5-(3-methyl-2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 50);
(±)-(51,1'u)-5-(3-methyl-2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 51);
(±)-5-(3-methyl-3-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 52);
(±)-5-(2-cyclopenta-1,3-dienyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 53);
(±)-(51,1'1)-5-(3-ethyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 55);
(±)-(51,1'u)-5-(3-ethyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 56);
(±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-7-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 58);
(±)-(51,1'u)-5-(3-methyl-2-cyclohexenyl)-7-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 59);
(±)-(51,1'1)-5-(3-ethyl-2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 61);
(±)-(51,1'1)-5-(3-ethylidenecyclohexyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 62);

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(±)-(51,1'l)-5-(3-methyl-3-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 63);
(±)-(51,1'l)-5-(3-methyl-2-cyclobexenyl)-9-fluoro-1,2-dihydro-8-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 64);
(±)-(51,1'u)-5-(3-methyl-2-cyclohexenyl)-9-fluoro-1,2-dihydro-8-methoxy-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 65);
(±)-(51,1'1)-5-(2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 67);
(±)-(51,1'u)-5-(2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 68);
(±)-5-(1-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethy1-5H-chromeno[3,4-f]quinoline (compound 69);
(±)-(51,1'1)-5-(2,3-dimethyl-2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 71);
Note
cyclopentenyl
(+)-(51,1'1)-5-(2,3-dimethyl-2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 73);
(−)-(51,1'1)-5-(2,3-dimethyl-2-cyclopentenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 74);
(±)-(51,1'1)-5-(2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 75);
(±)-(51,1'u)-5-(2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 76);
(±)-(51,1'1)-5-(2-cyclohexenyl)-7,9-difluoro-1,2,3,4-tetrahydro-2,2-dimethyl-4-methylidene-5H-chromeno[3,4-f]quinoline (compound 77);

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(±)-(51,1'l)-5-(2-methylidenecyclohexyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 79);
(±)-(51,1'u)-5-(2-methylidenecyclohexyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 80);
(±)-(51,1'1)-5-(2-oxocyclohexyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 81);
(±)-(51,1'u)-5-(2-oxocyclohexyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 82);
(±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-9-methoxy-1,2-dihydro-1,2,2,4-tetramethyl-5H-chromeno[3,4-f]quinoline (compound 83);
(±)-5-(2-cyc1ohexenyl)-9-fluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]-quinoline (compound 84);
(±)-(51,1'l)-5-(2,3-dimethyl-2-cyclohexenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 85);
(±)-5-(3-methy1idene-cyclohexyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 87);
(±)-(51,1'u)-5-(3-ethylidenecyclohexyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (compound 88);
(±)-(51,1'l)-5-(2-cyc1oheptenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethy1-5H-chromeno[3,4-f]quinoline (Compound 89);
(±)-(51,1'1)-5-(2-cyclooctenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (Compound 91);
(±)-(51,1'u)-5-(2-cyclooctenyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (Compound 92);

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(±)-(51,1'1)-5-(2,3-epoxy-3-methylcyclohexyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (Compound 94);
(±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-7,9-difluoro-1,2,3,4-tetrahydro-2,2-dimethyl-4-methylene-5H-chromeno[3,4-f]quinolin-3-ol (Compound 95);
(±)-(51,1'1)-5-(2,3-epoxy-2,3-dimethylcyclopentyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (Compound 96);
(±)-(51,1'u)-5-(2,3-epoxy-3-methylcyclohexyl)-7,9-difluoro-1,2-dihydro-2,2,4-trimethyl-5H-chromeno[3,4-f]quinoline (Compound 97); and
(±)-(51,1'1)-5-(3-methyl-2-cyclohexenyl)-7,9-difluoro-1,2,3,4-tetrahydro-2,2-dimethyl-5H-chromeno[3,4-f]quinolin-4-one (Compound 98).

Certificates

This certificate supersedes [illegible] of Correction issued November 28, 2006

Note

and April 3, 2007.

Signed and Sealed this

[illegible] Day of [illegible], 2007

[illegible]

[illegible]